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Notice of Allowability

Application No.

10/788,861

Examiner

James J. Leybourne

Applicant(s)

GRAF ET AL.

Art Unit

2881

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to Amendment received September 12, 2005.
2. ☒ The allowed claim(s) is/are 1-7, 10, 11 and 13-25.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|---|---|
| 1. <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input checked="" type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date _____. |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date _____ | 7. <input type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other _____. |

DETAILED ACTION

1. According to the "Amendment" received September 12, 2005, claims 1, 14, 19, 22 and 24 have been amended; 8, 9 and 26 have been canceled.

Response to Arguments

2. Applicant's Remarks received September 12, 2005 have been fully considered and are persuasive.

Examiner's Amendment

3. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

In claim 1 on line 12 following "density", insert -- during ion implantation --.

Authorization for this examiner's amendment was given in a telephone interview with Thomas G. Eschweiler on September 28, 2005.

Allowable Subject Matter

4. Claims 1-7, 10-11 and 13-25 are allowed. The following is an examiner's statement of reasons for allowance:

Regarding independent claims 1 and 19, the prior art fails to disclose or make obvious an ion implantation system comprising:

- a component downstream of the ion source for modulating the ion beam current density via at least one of a generated electric and magnetic field; and
- a measurement component for taking readings of beam current, the modulating component adjusting the beam current density in response to readings taken by the measurement component during ion implantation.

Claims 2-7, 10-11 and 13-18 are allowed by virtue of their dependency on claim 1.

Claims 20 and 21 are allowed by virtue of their dependency on claim 19.

With respect to the independent claim 22, the prior art fails to disclose or make obvious an ion implantation system comprising:

- a first modulating component associated with the ion source for modulating the beam current density via at least one of a generated electric and magnetic field; and
- a second modulating component downstream of the ion source for

selectively modulating the ion beam current density via at least one of a generated electric and magnetic field.

Claims 3 and 25 are allowed by virtue of their dependency on claim 22.

The main features that separates the apparatus apart from prior art are the use of closed loop feedback for claims 1 and 19 and the use of a second beam current density for claim 22.

5. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance"

Relevant Prior Art

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

7. The following patents are cited to show further show the state of the art with respect to ion beam current modulation in ion implantation systems:

USPN 5834786 to White et al.

USPN 6661016 to Berrian

USPN 4234797 to Ryding.

USPN 4290012 to Berte et al.

US 20050017202 A1 to White

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Conclusion


Any inquiry concerning this communication or earlier communications from the examiner should be directed to James J. Leybourne whose telephone number is (571) 272-2478. The examiner can normally be reached on M-F 9:00-6:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John R Lee can be reached on (571) 272-2477. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

September 29, 2005

JJL


NIKITA WELLS
PRIMARY EXAMINER 09/29/05